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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,315	07/02/2001	Brent Kevin Larson	DN2001138	1737

7590 08/27/2003  
The Goodyear Tire & Rubber Company  
Patent & Trademark Department - D/823  
1144 East Market Street  
Akron, OH 44316-0001

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/897,315		<b>Applicant(s)</b> LARSON, BRENT KEVIN6	
	<b>Examiner</b> Katarzyna Wyrozebski Lee		<b>Art Unit</b> 1714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 13 June 2003.

2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-22 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All   b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____
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In the light of applicant's amendment filed on 6/13/2003 following final office action has been necessitated.

In the response filed on 6/13/2003 the applicant's have amended claims to recite that the clay is intercalated and exfoliated in situ within elastomeric host by mixing components as depicted in claim 1. Newly added claims 21 and 22 require further addition of silane coupling agent.

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-7, 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over KATO (US 5,936,023).

The discussion of the disclosure of the prior art of KATO from paragraph 2 of the previous office action mailed on 3/19/2003 is incorporated here by reference.

3. Claims 8, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over KATO (US 5,936,023) in view of ELSPASS (US 6,034,164).

The discussion of the disclosure of the prior art of KATO from paragraph 2 and ELSPASS from paragraph 5 of the previous office action mailed on 3/19/2003 is incorporated here by reference.

4. Claims 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over KATO (US 5,936,023) in view of LI (US 6,060,549).

The discussion of the disclosure of the prior art of KATO from paragraph 2 of the previous office action mailed on 3/19/2003 is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of KATO is use of silane coupling agent and article formed therewith.

With respect to the above difference the prior art of LI discloses composition comprising elastomers and exfoliated clay. The prior art of LI also utilizes silane swelling agents such as alkoxysilanes, which will intrinsically react with OH groups of the clay component (col. 6, lines 45-49).

Swelling agents are utilized in order to increase basal spacing between the layers of the silicate and in some cases act as a coupling agents between the polymer and clay components.

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize silanes of LI in the composition of KATO and thereby obtain the claimed invention. Use of silanes of LI would still result in swelling of the clay component and thereby increasing the basal spacing between the clay platelets.

In the response mailed on 6/13/2003 the applicants have argued to following:

a) The prior art of KATO comprises a process, which first intercalates the clay with onium compound in aqueous dispersion, then intercalated clay is incorporated into elastomer. Therefore the prior art of KATO does not teach the process of present invention.

With respect to the above argument, broad proposition that it is obvious to simultaneously perform a process, which had previously been conducted in a stepwise manner, may be applicable when processes are physical in nature. In re Freed, 425 F2d 785; 165 USPQ 570 (CCPA 1970). Therefore it would have been obvious to one having ordinary skill in the art to prepare the composition of KATO simultaneously and thereby obtain the claimed invention. Simultaneous mixing of KATO would still provide exfoliated clay nanocomposite.

b) The prior art of KATO is deficient with respect to claims 8, 14-20.

The main claims rejected by the prior art of KATO are composition claims and not tire claims. The prior art of ELSPASS teaches tire inner-liner utilizing exfoliated clay as filler, since exfoliated clay improves gas barrier properties of the rubber composition. Both prior art disclosures teach vulcanization processes of the rubber compositions they produce. Selection of a known material based on its suitability for its intended use supports *prima facie* obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.* 325 U.S. 327, 65 USPQ 297 (1945).

c) The prior art of KATO also pre-treats the clay component with the ammonium compound; therefore it does not teach the present invention.

Kindly refer to examiners response in argument a. Absent unexpected results, it is examiner's position that the prior art of KATO and ELSPASS would produce the same exfoliated clay as the claims of the present invention.

Newly added claims are rejected over the prior art of KATO in view of LI, wherein LI teaches use of alkoxysilanes, which are not only known as a swelling agents but also a coupling agents.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Katarzyna Wyporebski Lee*  
KIWL  
August 22, 2003

EDWARD J. CAIN  
PRIMARY EXAMINER  
GROUP 1500

